

CLAIMS

WE CLAIM:

1. A method of determining an appropriate channel for a wireless device in a wireless network, the method comprising:
 - detecting a potentially interfering signal on a frequency channel over the wireless network;
 - retrieving data from the interfering signal to retrieve protocol identification information; and
 - prior to determining whether to transmit over the frequency channel, determining whether the identified protocol of the interfering signal is a predetermined protocol.
2. The method of claim 1 wherein the protocol identification information is a beacon transmitted by a generator of the interfering signal.
3. The method of claim 1 wherein the protocol identification information is located in a packet header transmitted by a generator of the potentially interfering signal.
4. The method of claim 1 wherein if the identified protocol is a predetermined protocol, interference from the potentially interfering signal is subject to further criteria for determining whether to select an alternate frequency channel.
5. The method of claim 1 wherein if the predetermined protocol is a same protocol as a signal to be transmitted over the frequency channel, a higher level of interference is tolerated.
6. The method of claim 1 wherein the predetermined protocol is described by an IEEE 802.11x protocol.
7. The method of claim 1 wherein the potentially interfering signal is compared to a threshold power level, the threshold power level being a function of the protocol used by the potentially interfering signal.

8. The method of claim 7 wherein the threshold power level is a higher power threshold if the protocol used by the potentially interfering signal is a protocol sharing predetermined functionalities with the wireless device.
9. The method of claim 8 wherein the wireless device transmits over the channel if the power level of the potentially interfering signal is below the threshold power level, wherein the transmitting of the wireless device is at a boosted power level to increase signal to noise levels of the wireless network.
10. The method of claim 8 wherein the wireless device transmits over the channel if the power level of the potentially interfering signal is below the threshold power level, wherein the transmitting of the wireless device is at a lowered power level to decrease power used by the wireless device.
11. The method of claim 7 wherein the threshold power level is a lower power threshold if the protocol used by the interfering signal is not a protocol sharing predetermined functionalities with the wireless device.
12. The method of claim 1 wherein the protocol of the potentially interfering signal is identified in a database prior to determining a threshold power level with which the wireless device could transmit on the frequency channel.
13. The method of claim 12 wherein the threshold power level is a function of the identified protocol.
14. The method of claim 13 wherein the wireless device transmits on the frequency channel if the potentially interfering signal is below the threshold power level.
15. A computer readable medium having stored therein instructions for performing acts for determining an appropriate channel for a wireless device in a wireless network, the acts comprising:
 - detecting a potentially interfering signal on a frequency channel over the wireless network;

retrieving data from the potentially interfering signal to retrieve protocol identification information; and

prior to determining whether to transmit over the frequency channel, determining whether the identified protocol of the potentially interfering signal is a predetermined protocol.

16. The computer readable medium of claim 15 wherein the protocol identification information is a beacon transmitted by a generator of the interfering signal.

17. The computer readable medium of claim 15 wherein the determination of the appropriate channel is performed by one or more of the wireless device, a host of the wireless network, a client device in the wireless network, and an access point.

18. The computer readable medium of claim 15 wherein the protocol identification information is located in a packet header transmitted by a generator of the potentially interfering signal.

19. The computer readable medium of claim 15 wherein if the identified protocol is a predetermined protocol, interference from the potentially interfering signal is subject to further criteria for determining whether to select an alternate frequency channel.

20. The computer readable medium of claim 15 wherein if the predetermined protocol is a same protocol as a signal to be transmitted over the frequency channel, a higher level of interference is tolerated.

21. The computer readable medium of claim 15 wherein the predetermined protocol is described by an IEEE 802.11x protocol.

22. The computer readable medium of claim 15 wherein the potentially interfering signal is compared to a threshold power level, the threshold power level being a function of the protocol used by the potentially interfering signal.

23. The computer readable medium of claim 22 wherein the threshold power level is a higher power threshold if the protocol used by the interfering signal is a protocol sharing predetermined functionalities with the wireless device.

24. The computer readable medium of claim 22 wherein the threshold power level is a lower power threshold if the protocol used by the potentially interfering signal is not a protocol sharing predetermined functionalities with the wireless device.
25. The computer readable medium of claim 15 wherein the protocol of the potentially interfering signal is identified in a database prior to determining a threshold power level with which the wireless device could transmit on the frequency channel.
26. The computer readable medium of claim 25 wherein the threshold power level is a function of the identified protocol.
27. The computer readable medium of claim 26 wherein the wireless device transmits on the frequency channel if the interfering signal is below the threshold power level.
28. A computer system comprising:
a processor; and
a memory coupled to the processor, the memory including one or more modules configured to determine an appropriate channel for communication over a wireless network by detecting a potentially interfering signal on a frequency channel, the modules including at least:
a receiver module configured to retrieve data from the interfering signal to identify protocol identification information; and
a protocol determination module configured to determine whether the identified protocol of the potentially interfering signal is a predetermined protocol, the determination module operable prior to a determination of whether to transmit over the frequency channel.
29. The computer system of claim 28 wherein the modules are included in a network interface card (NIC).
30. The computer system of claim 28 wherein the protocol identification information is a beacon transmitted by a generator of the interfering signal.

31. The computer system of claim 28 wherein the protocol identification information is located in a packet header transmitted by a generator of the potentially interfering signal.

32. The computer system of claim 28 wherein if the identified protocol is a predetermined protocol, interference from the potentially interfering signal is subject to further criteria for determining whether to select an alternate frequency channel.

33. The computer system of claim 28 wherein if the predetermined protocol is a same protocol as a signal to be transmitted over the frequency channel, a higher level of interference is tolerated.

34. The computer system of claim 28 wherein the predetermined protocol is described by an IEEE 802.11x protocol.

35. The computer system of claim 28 wherein the potentially interfering signal is compared to a threshold power level, the threshold power level being a function of the protocol used by the potentially interfering signal.

36. The computer system of claim 35 wherein the threshold power level is a higher power threshold if the protocol used by the potentially interfering signal is a protocol sharing predetermined functionalities with the computer system or a wireless device coupled to the computer system.

37. The computer system of claim 36, further comprising:
a transmitter module configured to transmit over the channel if the power level of the potentially interfering signal is below the threshold power level, wherein the transmission is at a boosted power level to increase signal to noise levels of the wireless network.

38. The computer system of claim 36 further comprising:
a transmitter module configured to transmit over the channel if the power level of the potentially interfering signal is below the threshold power level, wherein the transmission is at a lowered power level to decrease power used by the computer system.

39. The computer system of claim 35 wherein the threshold power level is a lower power threshold if the protocol used by the interfering signal is not a protocol sharing predetermined functionalities with the computer system or a wireless device coupled to the computer system.

40. The computer system of claim 28 further comprising a database configured to hold a plurality of protocols, wherein the protocol of the potentially interfering signal is checked against the plurality of protocols to determine a threshold power level with which to transmit on the frequency channel.

41. The computer system of claim 40 wherein the threshold power level is a function of the identified protocol.

42. A network interface card configured to be coupled to a computer system in a wireless network, the network interface card comprising

a processor; and

a memory coupled to the processor, the memory including one or more modules configured to determine an appropriate channel for communication over a wireless network by detecting a potentially interfering signal on a frequency channel, the modules including at least:

a receiver module configured to retrieve data from the interfering signal to identify protocol identification information; and

a protocol determination module configured to determine whether the identified protocol of the potentially interfering signal is a predetermined protocol, the determination module operable prior to a determination of whether to transmit over the frequency channel.

43. The network interface card of claim 42 wherein the protocol identification information is a beacon transmitted by a generator of the interfering signal.

44. The network interface card of claim 42 wherein if the identified protocol is a predetermined protocol, interference from the potentially interfering signal is subject to further criteria for determining whether to select an alternate frequency channel.

45. The network interface card of claim 42 wherein if the predetermined protocol is a same protocol as a signal to be transmitted over the frequency channel, a higher level of interference is tolerated.

46. The network interface card of claim 42 wherein the predetermined protocol is described by an IEEE 802.11x protocol.

47. The network interface card of claim 42 wherein the potentially interfering signal is compared to a threshold power level, the threshold power level being a function of the protocol used by the potentially interfering signal.

48. The network interface card of claim 42 wherein the threshold power level is a higher power threshold if the protocol used by the potentially interfering signal is a same protocol as the protocol used by the network interface card.

49. The network interface card of claim 47, further comprising:
a transmitter module configured to transmit over the channel if the power level of the potentially interfering signal is below the threshold power level, wherein the transmission is at a boosted power level to increase signal to noise levels of the wireless network.

50. The network interface card of claim 47 further comprising:
a transmitter module configured to transmit over the channel if the power level of the potentially interfering signal is below the threshold power level, wherein the transmission is at a lowered power level to decrease power used by the computer system.

51. The network interface card of claim 47 wherein the threshold power level is a lower power threshold if the protocol used by the interfering signal is not a same protocol as the protocol used by the network interface card.

52. The network interface card of claim 42 further comprising a database configured to hold a plurality of protocols, wherein the protocol of the potentially interfering signal is checked against the plurality of protocols to determine a threshold power level with

which to transmit on the frequency channel, the threshold power level being a function of the identified protocol.